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EXAMINER	
BROWN JR, NATHAN H	

ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/761,479	ANDERSON ET AL.
	Examiner	Art Unit
	Nathan H. Brown, Jr.	2121

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

Examiner's Detailed Office Action

1. This Office is responsive to the communication for application 10/761,479, filed August 10, 2006.

2. Claims 1-29 have been examined and it is noted that: claims 1, 9, 14, 19, and 24 have been amended while claims 2-8, 10-13, 15-18, 20-23, and 25-29 remain in their original form.

3. After the first office action, claims 1-29 stand rejected:

Claims 1-29 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claims are considered to be directed to an algorithm or software or a computer program that does not meet the standard set forth in the State Street Bank case of being tangible, useful, and concrete. In this instance the claims are not considered to be tangible since no real world result is provided. A system and methods provided for selecting a value set associated with a set of parameters, a real cost function that generates a real cost for a first value set associated with a set of parameters, a genetic algorithm that generates a second value set that is a variation of the first value set, and a cost function approximator that determines an approximate cost; generates a result in the set of reals, which is not tangible and concrete.

Claims 1, 2, 7, 8, 14, 19, 24, 26, and 29 are rejected under 35 U.S.C. 102(a) as being anticipated by *Russell et al.* "Artificial Intelligence A Modern Approach", 2003.

Regarding claim 1. *Russell et al.* a value set selection system (*see* Chapt. 4, Informed Search And Exploration, *Examiner interprets each informed search strategy to be a system to select a (optimal) value set.*), comprising: a real cost function that generates a real cost for a first value set associated with a set of parameters (*see* p. 97, "A* search: …", *Examiner interprets the real cost function to be g(n), the exact cost to reach node (or state) n. Examiner interprets a first value set associated with a set of parameters to be a set (population) of states, where each state is a string over a finite alphabet.*); a genetic algorithm (*see* p. 116, §4.3, Local Search Algorithms and Optimiztion Problems, Genetic algorithms, "A **genetic algorithm** (or GA) is a variant of stochastic beam search in which successive states are generated by combining *two* parent states, rather than by modifying a single state.") that generates a second value set that is a value set variation of the first value set (*see* p. 117, Fig. 4.15, *Examiner interprets a second value set to be a set of (offspring) states.*); and a cost function approximator that determines an approximate cost based on the real cost and the value set variation between the second value set and the first value set (*see* p. 97, "A* search: …", *Examiner interprets h(n), a heuristic estimate of the cost to the solution node (state) from the current node (state), n. Examiner further interprets a heuristic estimate of cost to be a function approximator, as it approximates the exact cost to the solution node. Examiner interprets* value set variation to be allele differences between a *current node, n, and a solution node.*).

Regarding claim 14. *Russell et al.* teach a system for selecting a value set associated with a set of parameters (*see* Chapt. 4, Informed Search And Exploration), the system comprising: a real cost function that determines a real cost for each of a plurality of real chromosomes that represent different value sets associated with a set of parameters (*see* p. 97, "A* search: …", *Examiner*

interprets the real cost function to be g(n), the exact cost to reach node n. Examiner interprets a real chromosome to be a state arrived at by the search implemented by the genetic algorithm. Examiner provides Official Notice that it would have been obvious at the time of the invention to apply the real cost function (as a type of fitness function) to each n in the plurality (population) of real chromosomes.); a genetic algorithm (*see* p. 116, §4.3, Local Search Algorithms and Optimiztion Problems, Genetic algorithms) that generates a first generation of speculative children chromosomes from parents selected from the plurality of real chromosomes (*see* p. 117, "The production of the next generation of states is shown in Figure 4.15(b)-(e).", *Examiner interprets a first generation of speculative children chromosomes to be states produced from the initial population of states as shown in Fig. 4.15.*), the genetic algorithm generates subsequent generations of speculative children chromosomes from parents selected from at least one of preceding generations of speculative chromosomes and the plurality of real chromosomes (*see* above), the speculative chromosomes representing incremental differences in the value sets between at least one parent chromosome and an associated child chromosome (*see* Figure 4.15(d), *Examiner interprets "crossover" to generate incremental differences in the value sets between at least one parent chromosome and an associated child chromosome.*); and an incremental cost function that determines speculative costs for a given speculative chromosome based on the incremental difference in the value sets between at least one parent chromosome and an associated child chromosome and the cost associated with at least one of the parent chromosomes (*see* p. 110, "Inductive learning methods work best when ...", *Examiner interprets h(n) to be the speculative cost for a given speculative chromosome where h(n) is a linear combination of features* $x_1(n)$ *and* $x_2(n)$ *which map incremental differences in the value sets*

between one parent chromosome (i.e., current state) and an associated child chromosome (e.g., potential goal state) to some real value.).

Regarding claim 19. *Russell et al.* teach a system for determining costs associated with a set of parameter values representing a solution (*see* §4.1, Informed (Heuristic) Search Strategies, p. 95, "h(n) = estimated cost of the cheapest path from node n to a goal node.", *Examiner interprets "a goal node" to be a set of parameter values representing a solution state.*), the system comprising: means for generating real chromosomes representing different value sets associated with a set of parameters (*see* p. 116, §4.3, Local Search Algorithms and Optimiztion Problems, Genetic algorithms); means for determining a real cost of at least one of the generated real chromosomes (*see* above); means for generating a speculative chromosome representing value set variations from at least one of the generated real chromosomes (*see* above); and means for determining a speculative cost based on the real cost and a difference in value sets of at least one of the generated real chromosomes and the speculative chromosome (*see* p. 110, "Inductive learning methods work best when ...").

Regarding claim 24. *Russell et al.* teach a method for selecting a value set associated with a set of parameters (*see* Chapt. 4, Informed Search And Exploration), comprising: determining a real cost of a first value set associated with a set of parameters (*see* p. 97, "A* search: ...", *Examiner interprets the real cost of a first value set associated with a set of parameters, n, to be g(n), the exact cost to reach node (or state) n.*); generating a second value set based on a difference in at least one value of the first value set (*see* p. 117, "The production of the next generation of states is shown in Figure 4.15(b)-(e)."); and approximating a speculative cost for the second value set

based on the difference and the real cost (*see* p. 97, "A* search: ...", *Examiner interprets h(n), a heuristic estimate (or speculation) of the cost to the solution node (state) from the current node (state), n, to be a function approximator, mapping n to some number (e.g., the distance–value set variation–from the current node (state), n, to the solution node (state).*).

Regarding claim 29. *Russell et al.* teach a computer-readable medium having computer-executable instructions for performing the method of claim 24 (*see* p. ix, §Preface, Using the Web site, first bullet.).

Regarding claim 2. *Russell et al.* teach the system of claim 1, the genetic algorithm generates at least one additional value set that is a variation of the second value set (*see* p. 117, Fig. 4.15, *Examiner interprets one additional value set that is a variation of the second value set to be a third generation population produced as shown in Fig. 4.15.*).

Regarding claim 7. *Russell et al.* teach the system of claim 1, further comprising a first group of value sets represented as real chromosomes (*see* p. 117, Fig. 4.15, *Examiner interprets a first group of value sets represented as real chromosomes as the initial population (of states).*), the real cost function provides corresponding real costs associated with each of the real chromosomes (*see* p. 97, "A* search: ...", *Examiner interprets the real cost of a first value set associated with a set of parameter values, n, to be g(n), the exact cost to reach node (or state) n. Examiner provides Official Notice that it would have been obvious at the time of the invention to apply the cost function (as a type of fitness function) to each n in the initial population.*), and a second group of value sets represented as speculative chromosomes (*see* p. 117, Fig. 4.15,

Examiner interprets a second group of value sets represented as speculative chromosomes as a subsequent population (of states) produced as shown in Fig. 4.15.), the cost function approximator provides corresponding approximate costs associated with the speculative chromosomes (*see* p. 97, "A* search: ...", *Examiner interprets h(n), a heuristic estimate (or speculation) of the cost to the solution node (state) from the current node (state), n, to be a function approximator (i.e., an approximation of the exact cost to the solution node from the current node). Examiner provides Official Notice that it would have been obvious at the time of the invention to apply the cost function (as a type of fitness function) to each n in a subsequent population.*).

Regarding claim 8. *Russell et al.* teach the system of claim 7, the genetic algorithm generates the second group of value sets represented as speculative chromosomes from parents selected from the real chromosomes (*see* p. 117, Fig. 4.15, *Examiner interprets a second group of value sets represented as speculative chromosomes as a subsequent population (of states) produced as shown in Fig. 4.15 from a previous population of parents selected from the real chromosomes by application of the fitness function.*).

Regarding claim 26. *Russell et al.* teach the method of claim 25, the first value set is represented as real chromosome and the second and third value sets are represented as speculative chromosomes, the second and third value set being generated by a genetic algorithm (*see* p. 117, Fig. 4.15, *Examiner interprets the first value set is represented as real chromosome to be the initial population at, say generation k, the second value set to be the population at generation k+1, and the third value set to be the population at generation k+2.*).

Applicant should note that indication of allowable subject matter in the previous Office Action is withdrawn as having been made in error. All claims in this application are subject to a rejection under 35 U.S.C. §101 and as such it is not clear how applicant will amend claims to overcome this rejection. As such, any indication of allowability would be based upon speculations. Accordingly, all claims remain rejected.

Response to Arguments

4. Applicants' arguments filed August 10, 2006 have been fully considered but they are not persuasive.

I. Rejection of claims 1-29 under 35 U.S.C. §101

5. With respect to Applicants arguments to traverse the rejection of claims 1-29 under 35 U.S.C. §101, Applicants have amended claims 1, 14, 19, and 24 to recite "a value set selection system for optimizing a circuit design…associated with the circuit design generated by a circuit analysis tool". While a circuit design generated by a circuit analysis tools is useful, concrete, and tangible, the claims don't causally connect the "value set selection system" to the circuit design. The mere "association" of the optimized circuit design with "the circuit design generated by a circuit analysis tool" doesn't assert that the generated circuit is optimized or that the computation of an optimized design causes a circuit (optimized or not) to be generated. Thus, claims 1, 14, 19, and 24 are still directed toward the 35 U.S.C. §101 judicial exception of: abstract idea, specifically, mathematical algorithm.

II. Rejection of claims 1,2,7,8,14,19,24,26, and 29 under 35 U.S.C. §102(a)

6. With respect to Applicants' arguments to traverse the rejection of claim 1 under 35 U.S.C. §102(a), Applicants argue that:

> In rejecting claim 1, the Examiner contends that an example of a heuristic estimate (h(n)) as disclosed in Russell, reads on the cost function approximator recited in amended claim 1 (See Office Action, Page 4). Applicant's representative respectfully disagrees. Russell discloses that h(n) is equal to an estimated cost of the cheapest path from node n to a goal node (See Russell, Page 95). In Russell, h(n) is based on the summation of the actual cost of moving among a plurality of nodes that lie between a first node and a goal node (See Russell, Page 95). In amended claim 1, the cost function estimator determines an approximate cost based on a real cost and a value set variation between a second value set and a first value set, and the second value set is a variation of the first value set. Russell does not disclose that h(n) is based on a value set variation. Instead, in Russell, h(n) is based on summation of actual costs. Accordingly, Russell does not disclose each and every element of amended claim 1. Therefore, amended claim 1 is not anticipated by Russell, and amended claim 1 should be patentable over the cited art.

First, Examiner notes that h(n) is not defined as a summation of the actual cost of moving among a plurality of nodes that lie between a first node and a goal node on Page 95 of Russell. Here h(n) is defined, simply, as the "estimated cost of the cheapest path from node n to a goal node" (*see* Russell, Page 95). No summation is defined for h(n). If h(n) were to sum the cost from n to the goal node for each path from n, no estimate would be involved; the exact cost would be known for each path. This is a feature of blind search, not heuristic (or informed) search! The example on page 95 of Russell states that "one might estimate the cost of the cheapest path from Arad to Bucharest via the straight line distance from Arad to Bucharest". This is typically accomplished with the Euclidean metric which involves a difference, not a sum. Examiner asserts that many variations on heuristic cost function were well known to the search community (*see* Russell, §4.1) at the time of the invention and that h_{SLD} is just one.

Second, Examiner notes that a value set variation in the context of this application is simply a first chromosome which differs from a second chromosome generated by a genetic algorithm. The values of some set are genes of a chromosome (see Russell, §4.3). A chromosome used in this fashion is equivalent to a vector, where the values of some set are carried as the elements of a vector. Since an n-element vector may be considered as a point in n-dimensional space, a n-gene chromosome may also be considered to be a point in n-dimensional space. The genetic algorithm thus performs the same search in n-dimensional space as a stochastic beam search (*see* Russell, Page 116). Now, every distinct point in an n-dimensional space is a value set variation of any other point in the space since no two distinct points can occupy the same location (i.e., some value of some element must be different between two distinct points). A heuristic function, h(n), which estimates the cheapest path from a node n in the n-dimensional space to the goal node in the n-dimensional space must somehow estimate the distance from n to the goal node. Therefore the heuristic function is based on the value set variation between node n and the goal node. Accordingly, Russell does disclose each and every element of amended claim 1, thus anticipating claim 1.

7. With respect to Applicants' arguments to traverse the rejection of claims 2 and 7 under 35 U.S.C. §102(a), Applicants argue that:

> Claims 2 and 7 depend from claim 1 and are not anticipated for at least the same reasons as claim 1, and for the specific elements recited therein.

Examiner asserts that as claims 2 and 7 depend from claim 1, they are anticipated for at least the same reason as claim 1 for the specific elements recited above.

8. With respect to Applicants' arguments to traverse the rejection of claim 14 under 35 U.S.C. §102(a), Applicants argue that:

> Russell does not disclose an incremental cost function that determines speculative costs for a given speculative chromosome based on an incremental difference in value sets between at least one parent chromosome and an associated child chromosome and the cost associated with at least one of the parent chromosomes, as recited in amended claim 14. In rejecting claim 14, the Examiner contends that an example of h(n) reads on the incremental cost function recited in claim 14 (See Office Action, Page 5). Applicant's representative respectfully disagrees. The cited section of Russell discloses that h(n) is equal to a sum of costs based on two different features, namely $x_1(n)$ and $x_2(n)$. (See Russell, Page 110). In the example disclosed in Russell, the two different features are the "number of misplaced tiles" and the "number of pairs adjacent tiles that are also adjacent in the state" (See Russell, Page 110). In amended claim 14, the incremental cost function determines speculative costs based incremental differences between at least one parent chromosome and an associated child chromosome and the cost associated with at lease one of the parent chromosomes. Russell does not disclose that $x_2(n)$ is a child chromosome of $x_1(n)$ (or vice-versa). Instead, Russell discloses that $x_1(n)$ and $x_2(n)$ are cost functions of two different features. Accordingly, Russell does not disclose each and every element of amended claim 14.

Examiner respectfully points out that Applicants have misunderstood the purpose of Russell's argument on page 110. Here, Russell is considering the *inductive learning* of an approximation of an estimation function, h(n), which can predict the costs of traversing the state space. What Russell discloses is that $x_2(n)$ and $x_1(n)$ are two different features (i.e., elements or genes) of *any* vector or chromosome and that a linear sum of the two different features for *a* vector or chromosome may be used as a *predictor* of h(n):

> We could take 100 randomly generated 8-puzzle configurations and gather statistics on their actual solution costs. We might find when $x_1(n)$ is 5, the average solution cost is around 14, and so on. Given these data, the value of x_1 can be used to predict h(n). Of course, we can use several features.

Examiner used the material on p. 110 of Russell as a prior art reference to the following part of claim 14:

> ...and an incremental cost function that determines speculative costs for a given speculative chromosome based on the incremental difference in the value sets between at least one parent chromosome and an associated child chromosome and the cost associated with at least one of the parent chromosomes (see p. 110, "Inductive learning methods work best when ...", *Examiner interprets h(n) to be the speculative cost for a given speculative chromosome where h(n) is a linear combination of features $x_1(n)$ and $x_2(n)$ which map incremental differences in the value sets between one parent chromosome (i. e., current state) and an associated child chromosome ...*

Here, Examiner asserts the equivalence between the heuristic cost function h(n) and a incremental cost function that determines speculative costs. Whether n is a child or parent chromosome is immaterial in computing the difference (i.e., set value difference) between them to estimate a cost from the current state (node) in the search space to a goal state (or, simply, the next state). Further, Examiner makes this prior art reference after introducing the equivalence of genetic algorithms and stochastic beam search in the rejection of claim 1. Accordingly, Russell does disclose each and every element of amended claim 14. Therefore Russell does anticipate amended claim 14, and amended claim 14 is not patentable over the cited art.

9. With respect to Applicant's arguments to traverse the rejection of claim 19 under 35 U.S.C. §102(a), Applicants argue that:

> Russell does not disclose means for determined a speculative cost based on a real cost and a difference in value sets of at least one generated real chromosomes and a speculative chromosome, as recited in amended claim 19. In rejecting claim 19, as with claim 14, the Examiner cites the example of h(n) disclosed in Russell that is based on a summation of costs based on two different features, namely $x_1(n)$ and $x_2(n)$ (S e e Office Action, Page 6). Applicant's representative respectfully disagrees with the Examiner's interpretation of Russell. In amended claim 19, the speculative chromosome represents value set variations from at least one of a generated chromosome. In Russell, $x_1(n)$ and $x_2(n)$ are not value set variations, but rather cost functions for different features. Accordingly, Russell does not disclose each and every element of amended claim 19. Therefore, Russell does not anticipate claim 19, and claim 19 should be patentable over the cited art.

Examiner asserts that the arguments for maintaining the rejection of claim 14 are valid here. The variable, n, stands for at least one of a generated chromosome during cost estimation. It is obvious that h(n) is a means for determined a speculative cost based on a real cost as h(n) is simply an estimate, which could be incorrect, and n is a node (chromosome) that has already incurred a real cost to reach. The actual cost function f(n) is a sum of h(n) and another function mapping n to the cost to reach n.

10. With respect to Applicant's arguments to traverse the rejection of claim 24 under 35 U.S.C. §102(a), Applicants argue that:

> Russell does not disclose approximating a speculative cost for a second value set based on a difference and a real cost, as recited in claim 24. In claim 24, the difference recited is the difference in at least one value of a first value set. In rejecting claim 24, as with claim 1, the Examiner cites the example of h(n) that is equal to an estimated cost of the cheapest path from node it to a goal node (See Office Action, Page 6, and Russell Page 95). However, the speculative cost recited in amended claim 24 is based on a difference and a real cost. In contrast, as stated above with respect to claim 1, the h(n) disclosed in the cited section of Russell is based only on a sum of costs. Therefore, Russell does not disclose each and every element of amended claim 24. Accordingly, Russell does not anticipate amended claim 24, and amended claim 24 should be patentable over the cited art.

Examiner asserts, h(n) is used as prior art to approximating a speculative cost for a second value set based on a difference and a real cost because h(n) is an estimation and therefore speculative. Also, Russell does disclose approximating h(n) by inductive means (*see* above). Therefore, Russell does disclose each and every element of amended claim 24. Accordingly, Russell does anticipate amended claim 24, and amended claim 24 is not patentable over the cited art.

11. With respect to Applicant's arguments to traverse the rejection of claim 26 under 35 U.S.C. §102(a), Applicants argue that:

> ...claim 26 depends from claim 25, which was indicated as allowable if rewritten independent form including all of the limitations of the base claim and any intervening claim (See Office Action, Page 9). Accordingly, Applicant's representative respectfully submits that claim 26 is patentable for at least the same reasons as claim 25, and therefore, the rejection of claim 26 should be withdrawn.

Examiner notes that while claim 26 is allowable if rewritten in independent form, including all of the limitations of the base claim and any intervening claim. However, claim 26 depends from claim 25, which depends from claim 24, which is not allowable for reasons stated above. Therefore, the rejection of claim 26 is maintained.

12. With respect to Applicant's arguments to traverse the rejection of claim 29 under 35 U.S.C. §102(a), Applicants argue that:

> ... claim 29 depends from amended claim 24 is not anticipated for at least the same reasons as amended claim 29 and for the specific elements recited therein. Accordingly, claim 29 should be patentable over the cited art.

Here, Examiner assumes that "claim 29 depends from amended claim 24 is not anticipated for at least the same reasons as amended claim 29" means --claim 29 depends from amended claim 24 is not anticipated for at least the same reasons as amended claim 24--. Examiner points out that claim 24 is not allowable for reasons stated above. Therefore, claim 29 is not allowable.

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan H. Brown, Jr. whose telephone number is 571-272- 8632. The examiner can normally be reached on M-F 0830-1700. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anthony Knight can be reached on 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more

information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Knight
Supervisory Patent Examiner
Tech Center 2100

Nathan H. Brown, Jr.
September 14, 2006